

CLAIMS

1. A method for producing a virus and/or viral proteins other than adenovirus or adenoviral proteins for use as a vaccine comprising providing a cell with at least a sequence encoding at least one gene product of the E1 gene or a functional derivative thereof of an adenovirus, providing said cell with a nucleic acid encoding said virus and/or said viral proteins, culturing said cell in a suitable medium and allowing for expression of said virus and/or said viral proteins and harvesting said virus and/or viral proteins from said medium and/or said cell.
2. A method according to claim 1, wherein said cell is a human primary cell.
3. A method according to claim 1 or 2, wherein said primary cell is immortalised by a gene product of said E1 gene.
4. A method according to any one of claims 1-3, wherein said cell is derived from a human embryonic retinoblast.
5. A method according to any one of claims 1-4, wherein said sequence encoding at least one gene product of the E1 gene is present in the genome of said human cell.
6. A method according to any one of claims 1-5, wherein said cell does not produce adenoviral structural proteins.
7. A method according to any one of the foregoing claims, wherein said cell further comprises a sequence encoding E2A or a functional derivative or analogue or fragment thereof.
8. A method according to any one of the foregoing claims wherein said sequence encoding E2A or a functional derivative or analogue or fragment thereof is present in the genome of said human cell.
9. A method according to any one of claims 7 or 8, wherein said E2A encoding sequence encodes a temperature sensitive mutant E2A.
10. A method according to any one of the foregoing claims, whereby said human cell comprises no other adenoviral sequences.

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11. A method according to any one of the foregoing claims, wherein said human cell is capable of growing in suspension.

12. A method according to anyone of the foregoing claims wherein said human cell can be cultured in the absence of serum.

13. A method according to any one of the foregoing claims wherein said human cell is PER.C6 as deposited under ECACC no. 96022940 or a derivative thereof.

14. A method according to any one of claims 1-13, wherein said virus and/or said viral proteins comprise a protein that undergoes post-translational and/or peritranslational modifications.

15. A method according to claim 14 wherein said modifications comprise glycosylation.

16. A method according to any one of the foregoing claims wherein said viral proteins comprise at least one of an Influenza virus neuramidase and/or a haemagglutinin.

17. A method according to any one of claims 1-16, wherein said virus is an enterovirus, such as rhinovirus, aphtovirus, or poliomyelitisvirus.

18. A method according to any one of claims 1-16, wherein said virus is a herpesvirus, such as herpes simplex virus, pseudorabies virus or bovine herpes virus.

19. A method according to any one of claims 1-16, wherein said virus is an orthomyxovirus, such as influenza virus, a paramyxovirus, such as newcastle disease virus, respiratory syncytio virus, mumps virus or a measles virus.

20. A method according to any one of claims 1-16, wherein said virus is a retrovirus, such as human immunodeficiency virus or wherein said virus is a parvovirus or a papovavirus.

21. A method according to any one of claims 1-16, wherein said virus is a rotavirus or a coronavirus, such as transmissible gastroenteritisvirus or a flavivirus, such as tick-borne encephalitis virus or yellow fever virus.

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22. A method according to any one of claims 1-16, wherein said virus is a togavirus, such as rubella virus or eastern-, western-, or venezuelean equine encephalomyelitis virus.

23. A method according to any one of claims 1-16, wherein  
5 said virus is a hepatitis causing virus, such as hepatitis A or hepatitis B virus.

24. A method according to any one of claims 1-16, wherein said virus is a pestivirus, such as hog cholera virus or a rhabdovirus, such as rabies virus.

10 25. Use of a human cell having a sequence encoding at least one E1 protein of an adenovirus or a functional derivative, homologue or fragment thereof in its genome which cell does not produce structural adenoviral proteins for the production of a virus or at least one viral protein for use in a  
15 vaccine.

26. Use according to claim 25, wherein said human cell is derived from a primary cell.

27. Use according to claim 25 or 26, wherein said human cell is a PER.C6 cell or a derivative thereof.

20 28. Use according to claim 25-27, wherein said cell further comprises a sequence encoding E2A or a functional derivative or analogue or fragment thereof in its genome.

29. Use according to claim 28, wherein said E2A is temperature sensitive.

25 30. A virus or a viral protein for use in a vaccine obtainable by a method according to any one of claims 1-24 or by a use according to any one of claims 25-29, said virus or said viral being free of any non-human mammalian protenaceous material.

30 31. A human cell having a sequence encoding at least one E1 protein of an adenovirus or a functional derivative, homologue or fragment thereof in its genome, which cell does not produce structural adenoviral proteins and having a nucleic acid encoding a virus or at least one non-adenoviral  
35 viral protein.

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32. A human cell according to claim 31 which is derived from PER.C6 as deposited under ECACC no. 96022940.

33. A human cell according to claim 31-32, which further comprises a sequence encoding E2A or a functional derivative or analogue or fragment thereof in its genome.

34. A human cell according to claim 33, wherein said E2A is temperature sensitive.

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